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EXAMINER

MA, JOHNNY

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/740,631

Applicant(s)

FOSTER, MARK J.

Examiner

Johnny Ma

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) 41-56 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/2000</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-40, drawn to dynamically adjusting the quantity of compression performed on visual content, classified in class 725, subclass 96.
 - II. Claims 41-56, drawn to processing node arrays, classified in class 725, subclass 144.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as dynamically adjusting the quantity of compression performed on visual content delivered over a network to a remote client. See MPEP § 806.05(d). Invention II has separate utility such as providing a processing node array structure for the delivery of content. See MPEP § 806.05(d).
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper. Furthermore, the inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper. These inventions are also distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

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4. During a telephone voicemail from Mr. Michael Glenn on 3/15/2005 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-40.

Affirmation of this election must be made by applicant in replying to this Office action. Claims 41-56 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: “512, 502, 506, 508, 510, 505, 504” of Figure 2A; “512,,502, 506, 508, 505, 504, 510” of Figure 2B; “212” of Figure 4A; “2000” of Figure 4D; and “2000, 250, 260, 602, 2002, 252” of Figure 4E. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: “switched network 2” (pg. 21, line 9).. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required

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in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

7. The disclosure is objected to because of the following informalities:

The Brief Description of the Drawings section includes a description of Figure 8a not included in the submitted drawings (pg. 13, Fig. 8a).

Figures 4e and 6e have been omitted from the Brief Description of the Drawings section (pg. 12-13).

"OPN 14" should read "OPU 14" (pg. 15, line 11);

"(R1, R2, R3, R4 and C1, C2, C3, C4,)" should read "(R0, R1, R2, R3 and C0, C1, C2, C3)" (pg. 21, line 16).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 21 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as

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the invention. Claim 21 recites "The method of claim 21 wherein." However, for the purpose of an art rejection, the examiner will interpret claim 21 to depend on independent claim 1.

Claim Objections

10. Claims 1 and 26 objected to because of the following informalities: "decreasing the compression ration" should read "decreasing the compression ratio" (Claim 1, line 10; Claim 26, line 9). Appropriate correction is required.

11. Claim 27 is objected to because of the following informalities: Claim 27 recites "The method in claim 6 wherein" whereas it appears that applicant intends claim 27 to rely upon claim 26 as evidenced by claims 28-40. Appropriate correction is required.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1, 10, 14, 16, 18, 20-24, 26-30, 32, 34, and 36-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Aharoni et al. (US 6,014,694).

As to claim 1, note the Aharoni et al. reference that discloses a system for adaptive video/audio transport over a network. The claimed "receiving a request for visual content from a remote client" is met by "[t]he function of the video server is to accept a remote client connection request" (Aharoni 11:28-32). The claimed "retrieving the visual content to local memory" is met by "the video data is transmitted over a network that connects the remote video data 16 to the video server 18 (Aharoni 7:44-60, also see Figure 2). The claimed "receiving feedback regarding a change in demand in bandwidth on the network" is met by "[b]ased on bandwidth measurement, the sender determines the appropriate level of quality to transmit to the

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client to best match the available bandwidth” (Aharoni 8:1-8, also see columns 13-17). The claimed “increasing the compression ratio of visual content in response to increasing demand for bandwidth and decreasing the compression ratio of visual content in response to decreasing demand for bandwidth” is met by “[d]epending on the channel bandwidth, the system adjusts the compression ratio” (Aharoni 6:61-67). The claimed “accessing the local memory to retrieve the visual content” is met by “retrieve a local or remote stored file and transmit it to the client” (Aharoni 11:28-32). The claimed “compressing the visual content to form a plurality of data frames that are representative of the visual content” is met by “the raw video source is compressed into three types of data objects commonly referred to as frames” (Aharoni 8:54-58). The claimed “outputting the plurality of data frames to the remote client” is met by video server transmits the data frames to the client (Aharoni 11:27-44).

As to claim 10, the claimed “reducing the resolution of the visual content stored to the local memory” is met by “[b]andwidth adjustability is provided by offering a trade off between video resolution...” (Aharoni 7:1-6).

As to claim 14, the claimed “wherein, the feedback regarding a change in demand from bandwidth originates externally from the processor system” is met by “the client reports back status and bandwidth related information to the video server via a reverse channel” (Aharoni 17:52-54).

As to claim 16, the claimed “the feedback regarding a change in demand bandwidth originates from within the processor system” is met by “[t]he sender also measures the available bandwidth of the network connection between the video server and the video client” (Aharoni 8:8-10).

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As to claim 18, the claimed “the plurality of data frames output to the remote client comprises an MPEG2 transport stream” is met by MPEG video compression (Aharoni 6:56-60) wherein the video data is transported to an user (Aharoni 7:36-40; 8:1-7).

As to claim 20, the claimed “establishing an application session” is met by “[t]he video client is a graphical user interface (GUI) based process or application that functions to decode a video stream transmitted by the server” (Aharoni 17:42-44).

As to claim 21, the claimed “the application session is selected from the group consisting of; an Internet Browser, and an Email application” is met by the GUI application as discussed in the rejection of claim 20 wherein the system may operate through the Internet (Aharoni 6:35-40), thus the application serves as a Web Browser.

As to claim 22, the claimed “accessing a server through a switched network” is met by “[t]he invention has application to any type of network including those that utilize the Internet Protocol (IP) such as the Internet or any other TCP/IP based network (Aharoni 6:35-39).

As to claim 23, please see rejection of claim 22.

As to claim 24, the claimed “the network through which the visual content is delivered comprises a broadband network” is met by use in networks with high bandwidth capabilities such as switched LAN environments” (Aharoni 6:64-7:1).

As to claim 26, note the Aharoni et al. reference discloses a system for adaptive video/audio transport over a network. The claimed “receiving a request for motion video or audio content from a remote client” is met by “[t]he function of the video server is to accept a remote client connection request” (Aharoni 11:28-32). The claimed “receiving feedback regarding a change in demand for bandwidth on the network” is met by “[b]ased on bandwidth

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measurement, the sender determines the appropriate level of quality to transmit to the client to best match the available bandwidth” (Aharoni 8:1-8, also see columns 13-17). The claimed “increasing the compression ratio of visual content in response to increasing demand for bandwidth and decreasing the compression ratio of visual content in response to decreasing demand for bandwidth” is met by “[d]epending on the channel bandwidth, the system adjusts the compression ratio” (Aharoni 6:61-67). The claimed “compressing the visual content to form a plurality of data frames that are representative of the visual content” is met by “the raw video source is compressed into three types of data objects commonly referred to as frames” (Aharoni 8:54-58). The claimed “outputting the plurality of data frames to the remote client” is met by video server transmits the data frames to the client (Aharoni 11:27-44).

As to claim 27, the claimed “reducing the rate of outputting data frames to the remote client” is met by “[b]andwidth adjustability is provided by offering a trade off between... frame rate...” (Aharoni 7:1-6).

As to claim 28, the claimed “the plurality of data frames comprise an MPEG2 Transport Stream” is met by MPEG video compression (Aharoni 6:56-60) wherein the video data is sent to a user (Aharoni 7:36-40; 8:1-7).

As to claim 29, the claimed “the reduced rate of data frames outputted consists of a reduction of at least one type of frame selected from the group consisting of; I-frames, B-frames, or P-frames” is met by “the packet generator functions to determine which (if any) frames to skip. Depending on the measured bandwidth of the channel, the packet generator may skip frames in order to reduce the transmitted bit rate. This occurs when the bandwidth of the

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network connection cannot support transmission of every Key [I], P and B frame” (Aharoni 12:48-55).

As to claim 30, the claimed “wherein, the feedback regarding a change in demand from bandwidth originates externally from the processor system” is met by “the client reports back status and bandwidth related information to the video server via a reverse channel” (Aharoni 17:52-54).

As to claim 32, the claimed “the feedback regarding a change in demand from bandwidth originates from within the processor system” is met by “[t]he sender also measures the available bandwidth of the network

As to claim 34, the claimed “the plurality of data frames output to the remote client comprise an MPEG2 transport stream” is met by MPEG video compression (Aharoni 6:56-60) wherein the video data is sent to a user (Aharoni 7:36-40; 8:1-7).

As to claim 36, the claimed “accessing a server through a switched network” is met by “[t]he invention has application to any type of network including those that utilize the Internet Protocol (IP) such as the Internet or any other TCP/IP based network (Aharoni 6:35-39).

As to claim 37, please see rejection of claim 36.

As to claim 38, the claimed “server comprises a video-on-demand server” is met by “during the server/client connection, the client can control the transmission of the data by the server, thus performing a video on demand function” (Aharoni 11:41-44).

As to claim 39, the claimed “the network through which the visual content is delivered comprises a broadband network” is met by use in networks with high bandwidth capabilities such as switched LAN environments” (Aharoni 6:64-7:1).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 2-9 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aharoni et al. (US 6,014,694) in further view of Fert et al. (US 2003/0227970 A1).

As to claim 2, the claimed “duplicating the data frame to form the plurality of data frames” is met by “compressing a raw video source into a plurality of frames, each frame comprising a plurality of levels” (Aharoni 2:56-58). Also note the Aharoni et al. reference discloses “any suitable method of video compression can be utilized in the present invention such as described in connection with the Motion Pictures Expert Group (MPEG)-1, MPEG-2 or MPEG-4 standards” (Aharoni 6:57-60). However, the Aharoni reference is silent as to the MPEG compression process. Now note the Fert et al. reference that discloses a variable bitrate video coding method and corresponding video coder. The claimed “spatially, compressing the visual content to form a data frame that is representative of the visual content” is met by, in regard to MPEG, “this standard is based on a data compression achieved by using a block-based motion compensation for the reduction of the temporal redundancy and a discrete cosine transformation (DCT) for the reduction of the spatial redundancy” (Fert [0002]). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Aharoni compression with the Fert et al. spatial

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compression for the purpose of providing means for higher compression rates to conserve transmission bandwidth and storage capacity requirements.

As to claim 3, note the Aharoni et al. reference discloses “any suitable method of video compression can be utilized in the present invention such as described in connection with the Motion Pictures Expert Group (MPEG)-1, MPEG-2 or MPEG-4 standards” (Aharoni 6:57-60). However, the Aharoni et al. reference is silent as to omitting at least a portion of coefficients that are representative of the higher frequencies. Now note the Fert et al. reference that discloses a variable bitrate video codec method and corresponding video coder. The claimed “transforming the frequencies present in the visual content into a plurality of coefficients that are representative of the frequencies present in the visual content” is met by “[a] DCT is then performed on the prediction error, for a block of 8x8 pixels...and the frequency components thus obtained are quantized” (Fert [0032]). The claimed “omitting at least a portion of the plurality of coefficients that are representative of the higher frequencies present in the visual content” is met by “[a]s the human eye is less sensible to the higher frequencies than to the lower ones, it is advantageous to use coarser quantizers for the high frequency components (in fact, in order to achieve the frequency dependent quantization, a weighting matrix is applied to a basic macroblock quantization parameter: a lot of coefficients, especially those at high frequencies, is equal to 0 after said weighted quantization)” (Fert [0032]). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the Aharoni et al. compression with the Fert et al. dropping of high frequency components for the purpose of decreasing the amount of data required in the video by dropping high frequency components that is less sensible to the human eye. Note the claimed “forming the

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data frame from the plurality of remaining coefficients” is met by the Aharoni et al. and Fert et al. combination comprising compression with the dropping of high frequency coefficients and comprising “compressing a raw video source into a plurality of frames, each frame comprising a plurality of levels” (Aharoni 2:56-58).

As to claim 4, note the Aharoni et al. reference discloses “any suitable method of video compression can be utilized in the present invention such as described in connection with the Motion Pictures Expert Group (MPEG)-1, MPEG-2 or MPEG-4 standards” (Aharoni 6:57-60). However, the Aharoni et al. reference is silent as to the MPEG compression process. Now note the Fert et al. reference that discloses a variable bitrate video coding method and corresponding video coder. The claimed “spatially, compressing the visual content to form a data frame that is representative of the visual content” and “temporally, compressing the data frame “ is met by, in regard to MPEG, “this standard is based on a data compression achieved by using a block-based motion compensation for the reduction of the temporal redundancy and a discrete cosine transformation (DCT) for the reduction of the spatial redundancy” (Fert [0002]). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Aharoni compression with the Fert et al. spatial compression for the purpose of providing means for higher compression rates to conserve transmission bandwidth and storage capacity requirements. Note the claimed “to form the plurality of data frames is met by the Aharoni et al. and Fert et al. combination including “compressing a raw video source into a plurality of frames, each frame comprising a plurality of levels” (Aharoni 2:56-58).

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As to claim 5, note the Aharoni et al. reference discloses “any suitable method of video compression can be utilized in the present invention such as described in connection with the Motion Pictures Expert Group (MPEG)-1, MPEG-2 or MPEG-4 standards” (Aharoni 6:57-60). However, the Aharoni et al. reference is silent as to omitting at least a portion of coefficients that are representative of the higher frequencies. Now note the Fert et al. reference that discloses a variable bitrate video codec method and corresponding video coder. The claimed “transforming the frequencies present in the visual content into a plurality of coefficients that are representative of the frequencies present in the visual content” is met by “[a] DCT is then performed on the prediction error, for a block of 8x8 pixels... and the frequency components thus obtained are quantized” (Fert [0032]). The claimed “omitting at least a portion of the plurality of coefficients that are representative of the higher frequencies present in the visual content” is met by “[a]s the human eye is less sensible to the higher frequencies than to the lower ones, it is advantageous to use coarser quantizers for the high frequency components (in fact, in order to achieve the frequency dependent quantization, a weighting matrix is applied to a basic macroblock quantization parameter: a lot of coefficients, especially those at high frequencies, is equal to 0 after said weighted quantization)” (Fert [0032]). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the Aharoni et al. compression with the Fert et al. dropping of high frequency components for the purpose of decreasing the amount of data required in the video by dropping high frequency components that is less sensible to the human eye. Note the claimed “forming the data frame from the plurality of remaining coefficients” is met by the Aharoni et al. and Fert et al. combination comprising compression with the dropping of high frequency coefficients and

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comprising “compressing a raw video source into a plurality of frames, each frame comprising a plurality of levels” (Aharoni 2:56-58).

As to claim 6, the claimed “generating a non-spatially compressed data frame of visual content” is met by “[t]he raw video source can be, for example, a non compressed AVI file, a non compressed QuickTime file or a compressed MPEG-1 audio/video file” (Aharoni 8:50-53) wherein it is inherent that such compressed file be generated for use. However, the Aharoni et al. reference is silent as to the MPEG compression process. Now note the Fert et al. reference that discloses a variable bitrate video coding method and corresponding video coder. The claimed “temporally, compressing the non-spatially compressed data frame to form the plurality of data frame “ is met by, in regard to MPEG, “this standard is based on a data compression achieved by using a block-based motion compensation for the reduction of the temporal redundancy and a discrete cosine transformation (DCT) for the reduction of the spatial redundancy” (Fert [0002]) wherein temporal compression is performed prior to spatial compression (Fert [0027, 0032]). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Aharoni compression with the Fert et al. spatial compression for the purpose of providing means for higher compression rates to conserve transmission bandwidth and storage capacity requirements. Note the claimed “to form the plurality of data frames” is met by the Aharoni et al. and Fert et al. combination including “compressing a raw video source into a plurality of frames, each frame comprising a plurality of levels” (Aharoni 2:56-58).

As to claim 7, the claimed “reducing the rate of outputting data frames to the remote client” is met by bandwidth adjustability including adjusting the frame rate (Aharoni 7:1-6).

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As to claim 8, the claimed “the plurality of data frames comprise an MPEG2 transport stream” is met by MPEG video compression (Aharoni 6:56-60) wherein the video data is transported to a user (Aharoni 7:36-40; 8:1-7).

As to claim 9, the claimed “the reduced rate of data frames outputted consists of a reduction of at least one type of frame selected from the group consisting of, I-frames, B-frames, or P-frames” is met by “the packet generator functions to determine which (if any) frames to skip. Depending on the measured bandwidth of the channel, the packet generator may skip frames in order to reduce the transmitted bit rate. This occurs when the bandwidth of the network connection cannot support transmission of every Key [I], P and B frame” (Aharoni 12:48-55).

As to claim 11, the claimed “reducing the resolution of the visual content stored to the local memory” is met by “[b]andwidth adjustability is provided by offering a trade off between video resolution....” (Aharoni 7:1-6) Further note the Aharoni et al. reference discloses “any suitable method of video compression can be utilized in the present invention such as described in connection with the Motion Pictures Expert Group (MPEG)-1, MPEG-2 or MPEG-4 standards” (Aharoni 6:57-60). However, the Aharoni et al. reference is silent as to the MPEG compression process. Now note the Fert et al. reference that discloses a variable bitrate video coding method and corresponding video coder. The claimed “spatially, compressing the visual content to form a data frame that is representative of the visual content” and “temporally, compressing the data frame” is met by, in regard to MPEG, “this standard is based on a data compression achieved by using a block-based motion compensation for the reduction of the temporal redundancy and a discrete cosine transformation (DCT) for the reduction of the spatial

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redundancy” (Fert [0002]). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Aharoni compression with the Fert et al. spatial compression for the purpose of providing means for higher compression rates to conserve transmission bandwidth and storage capacity requirements. Note the claimed “to form the plurality of data frames” is met by the Aharoni et al. and Fert et al. combination including “compressing a raw video source into a plurality of frames, each frame comprising a plurality of levels” (Aharoni 2:56-58).

As to claim 12, the claimed “the plurality of data frames comprise an MPEG2 transport stream” is met by MPEG video compression (Aharoni 6:56-60) wherein the video data is transported to a user (Aharoni 7:36-40; 8:1-7).

As to claim 13, the claimed “the reduced rate of data frames outputted consists of a reduction of at least one type of frame selected from the group consisting of, I-frames, B-frames, or P-frames” is met by “the packet generator functions to determine which (if any) frames to skip. Depending on the measured bandwidth of the channel, the packet generator may skip frames in order to reduce the transmitted bit rate. This occurs when the bandwidth of the network connection cannot support transmission of every Key [I], P and B frame” (Aharoni 12:48-55).

15. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aharoni et al. (US 6,014,694) in further view of Fert et al. (US 2003/0227970 A1) and Mimura et al. (US 6,785,733 B1).

As to claim 15, the claimed “communicating with a component that is coupled to a CATV programming distribution system and located at a site selected from the group consisting

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of, a Node, a local Headend, or a Metropolitan Headend.” Note the Aharoni et al. reference discloses the claimed communicating with a component located at a node wherein “the client reports back status and bandwidth related information to the video server via a reverse channel” (Aharoni 17:52-54). Also note the Aharoni et al. reference discloses that “[t]he present invention has application to any type of network including those that utilize the Internet Protocol (IP) such as the Internet or other TCP/IP networks” (Aharoni 2:13-16). However, the Aharoni et al. reference does not specifically disclose a CATV programming distribution system. Now note the Mimura et al. reference that discloses a transport protocol conversion method and protocol conversion equipment. The claimed “CATV programming distribution system” is met by “[a] system for performing video transmission on the basis of an MPEG-TS system includes a digital satellite broadcasting system and a digital CATV system” (Mimura 2:54-67). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Aharoni et al. network to implement a CATV system for the purpose of providing broadband data transmission to users located in various areas, and further to provide such services using a known and existing infrastructure.

16. Claims 17 and 33 rejected under 35 U.S.C. 103(a) as being unpatentable over Aharoni et al. (US 6,014,694).

As to claim 17, the claimed “the feedback correlates to the quantity of requests for visual content received by the processor system.” Note the Aharoni et al. reference discloses by “[t]he sender also measures the available bandwidth of the network connection between the video server and the video client” (Aharoni 8:8-10). However, the Aharoni et al. reference is silent as to the feedback correlating to the quantity of requests. Nevertheless the examiner gives Official

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Notice that it is notoriously well known in the art that available bandwidth fluctuates with the number of connections to a system, such as number of requesting users on a specific communications channel. Therefore the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Aharoni et al. measuring of available bandwidth accordingly for the purpose of providing quick estimation of bandwidth usage within a communication path.

As to claim 33, the claimed “the feedback correlates to the quantity of requests for visual content received by the processor system.” Note the Aharoni et al. reference discloses by “[t]he sender also measures the available bandwidth of the network connection between the video server and the video client” (Aharoni 8:8-10). However, the Aharoni et al. reference is silent as to the feedback correlating to the quantity of requests. Nevertheless the examiner gives Official Notice that it is notoriously well known in the art that available bandwidth fluctuates with the number of connections to a system, such as number of requesting users on a specific communications channel. Therefore the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Aharoni et al. measuring of available bandwidth accordingly for the purpose of providing quick estimation of bandwidth usage within a communication path.

17. Claims 19 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aharoni et al. (US 6,014,694) in further view of Kostreski et al. (US 5,635,979).

As to claim 19, the claimed “communicating a combination of a unique channel and Program Identifier to the remote client that carries the MPEG2 transport stream.” Note the Aharoni et al. reference discloses “[t]he function of the video server is to accept a remote client

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connection request, retrieve a local or remote stored file and transmit it to the client” (Aharoni 11:28-31). Further note, the Aharoni et al. reference discloses a MPEG2 Transport Stream wherein MPEG compressed video (Aharoni 6:56-60) is transported to an user (Aharoni 7:36-40; 8:1-7). However, the Aharoni et al. reference is silent as to how the requested video is routed to an user. Now note the Kostreski et al. reference that discloses a dynamically programmable digital entertainment terminal using downloaded software to control broadband data operations. The claimed “communicating a combination of a unique channel and Program Identifier to the remote client that carries the MPEG2 transport stream” is met by “Also, the discussion of FIG. 3 above assumed that each ADSL line provided by the network connects to only one DET. The DET therefore did not need to recognize its own address or program identifiers in the broadband data stream. Advanced networks, however, will transport different broadband data streams... each DET in the home will have its own address and will recognize that address as well as different broadcast channel identifiers in the particular type of broadband data stream transported in to the home, e.g. multi-channel MPEG 2 or MPEG 2 transported in ATM cell form” (Kostreski 19:4-15). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Aharoni et al. sending of requested content with the Kostreski et al. unique channel and program identifier for the purpose of properly routing data to the requesting user.

As to claim 35, the claimed “communicating a combination of a unique channel and Program Identifier to the remote client that carries the MPEG2 transport stream.” Note the Aharoni et al. reference discloses “[t]he function of the video server is to accept a remote client connection request, retrieve a local or remote stored file and transmit it to the client” (Aharoni

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11:28-31). Further note, the Aharoni et al. reference discloses a MPEG2 Transport Stream wherein MPEG compressed video (Aharoni 6:56-60) is transported to an user (Aharoni 7:36-40; 8:1-7). However, the Aharoni et al. reference is silent as to how the requested video is routed to an user. Now note the Kostreski et al. reference that discloses a dynamically programmable digital entertainment terminal using downloaded software to control broadband data operations. The claimed “communicating a combination of a unique channel and Program Identifier to the remote client that carries the MPEG2 transport stream” is met by “Also, the discussion of FIG. 3 above assumed that each ADSL line provided by the network connects to only one DET. The DET therefore did not need to recognize its own address or program identifiers in the broadband data stream. Advanced networks, however, will transport different broadband data streams...each DET in the home will have its own address and will recognize that address as well as different broadcast channel identifiers in the particular type of broadband data stream transported in to the home, e.g. multi-channel MPEG 2 or MPEG 2 transported in ATM cell form” (Kostreski 19:4-15). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Aharoni et al. sending of requested content with the Kostreski et al. unique channel and program identifier for the purpose of properly routing data to the requesting user.

18. Claims 25, 31, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aharoni et al. (US 6,014,694) in further view of Mimura et al. (US 6,785,733 B1).

As to claim 25, the claimed “the broadband network comprises a CATV broadband network.” Note the Aharoni et al. reference discloses that “[t]he present invention has application to any type of network including those that utilize the Internet Protocol (IP) such as

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the Internet or other TCP/IP networks” (Aharoni 2:13-16) and networks with high bandwidth capabilities such as switched LAN environments” (Aharoni 6:64-7:1). However, the Aharoni et al. reference does not specifically disclose a CATV programming distribution system. Now note the Mimura et al. reference that discloses a transport protocol conversion method and protocol conversion equipment. The claimed “CATV programming distribution system” is met by “[a] system for performing video transmission on the basis of an MPEG-TS system includes a digital satellite broadcasting system and a digital CATV system” (Mimura 2:54-67). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Aharoni et al. network to implement a CATV system for the purpose of providing broadband data transmission to users located in various areas, and further to provide such services using a known and existing infrastructure.

As to claim 31, the claimed “communicating with a component that is coupled to a CATV programming distribution system and located at a site selected from the group consisting of; a Node, a local Headend, or a Metropolitan Headend.” Note the Aharoni et al. reference discloses the claimed communicating with a component located at a node wherein “the client reports back status and bandwidth related information to the video server via a reverse channel” (Aharoni 17:52-54). Also note the Aharoni et al. reference discloses that “[t]he present invention has application to any type of network including those that utilize the Internet Protocol (IP) such as the Internet or other TCP/IP networks” (Aharoni 2:13-16). However, the Aharoni et al. reference does not specifically disclose a CATV programming distribution system. Now note the Mimura et al. reference that discloses a transport protocol conversion method and protocol conversion equipment. The claimed “CATV programming distribution system” is met by “[a]

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system for performing video transmission on the basis of an MPEG-TS system includes a digital satellite broadcasting system and a digital CATV system” (Mimura 2:54-67). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Aharoni et al. network to implement a CATV system for the purpose of providing broadband data transmission to users located in various areas, and further to provide such services using a known and existing infrastructure.

As to claim 40, the claimed “the broadband network comprises a CATV broadband network.” Note the Aharoni et al. reference discloses that “[t]he present invention has application to any type of network including those that utilize the Internet Protocol (IP) such as the Internet or other TCP/IP networks” (Aharoni 2:13-16) and networks with high bandwidth capabilities such as switched LAN environments” (Aharoni 6:64-7:1). However, the Aharoni et al. reference does not specifically disclose a CATV programming distribution system. Now note the Mimura et al. reference that discloses a transport protocol conversion method and protocol conversion equipment. The claimed “CATV programming distribution system” is met by “[a] system for performing video transmission on the basis of an MPEG-TS system includes a digital satellite broadcasting system and a digital CATV system” (Mimura 2:54-67). Therefore, the examiner submits that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Aharoni et al. network to implement a CATV system for the purpose of providing broadband data transmission to users located in various areas, and further to provide such services using a known and existing infrastructure.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Normile et al. reference (US 5,461,679) discloses a method and apparatus for encoding/decoding image data.

The Christopoulos et al. reference (US 2001/0047517 A1) discloses a method and apparatus for intelligent transcoding of multimedia data.

The Nagashima et al. reference (US 6,434,746 B1) discloses accounting in an image transmission system based on a transmission mode and an accounting mode based on the transmission mode.

The Guedalia reference (US 6,536,043 B1) discloses a method and systems for scalable representation of multimedia data for progressive asynchronous transmission.

The Robinett et al. reference discloses bandwidth optimization of video program bearing transport streams.

The Bum reference (US 6,285,685 B1) discloses an apparatus and method for providing PC communication and internet service by using settop box.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johnny Ma whose telephone number is (571) 272-7351. The examiner can normally be reached on 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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